Embedded Artists'

iMX8M COM Board rev A

The Art of Embedded Systems Development – **made Easy™**

Document status: Preliminary

iMX8M COM Board Feature Highlights

- NXP i.MX 8M, Quad/Dual-core ARM Cortex-A53 and Cortex-M4F, up to 1.5GHz/266MHz
- High performance, up to 13800 DMIPS
- 1 GByte LPDDR4 3200 MT/s, 32-bit databus
- 8 GByte eMMC on-board Flash
- 4Kp60 video decoding
- HDMI and MIPI-DSI graphical output
- Dual PCIe, USB3.0/2.0, Gigabit Ethernet and more
- Linux BSP
- 82 x 50 mm small form factor
- Long term availability

Introduction

The **iMX8M COM Board** provides a quick and easy solution for implementing a high-performance ARM quad/dual-core Cortex-A53 / Cortex-M4F based design. The Cortex-A53 / Cortex-M4F heterogeneous architecture enables the system to run an OS like **Linux on the quad/dual-core Cortex-A53** and a **Real-Time OS (RTOS) on the Cortex-M4F**.

The i.MX 8M supports **4K video decoding** and has dual display outputs (HDMI and MIPI-DSI).
The design is a **low-power implementation** with LPDDR4 memories and a PMIC supporting DVFS techniques. Typical applications are media streaming, general graphical interface solutions, communication solutions and connected real-time systems.

Specification

Processor	Cores	NXP i.MX 8M Quad/Dual-core ARM Cortex-A53 and Cortex-M4F
	Frequency	1.3/1.5 GHz on Cortex-A53 (industrial/commercial temperature range) 266 MHz on Cortex-M4F
Memory	SDRAM	1 GByte LPDDR4 3200 MT/s, 32-bit databus
	NAND FLASH	8 GByte eMMC NAND Flash for OS and bootloader
Graphics output	HDMI	HDMI 2.0a supporting one display with resolution up to 4096 x 2160 at 60 Hz
	MIPI-DSI	4 lanes with resolution up to 1920 x 1080 at 60 Hz
	Video Engine	Decode: 4Kp60
	2D/3D Graphics Engine	GC7000Lite, OpenCL 1.2 and Vulkan, OpenGL ES 1.1/2.0/3.0/3.1.
Graphics input	CMOS sensor interface (camera)	2x MIPI-CSI2, 4 lanes each
Ethernet		1x Gigabit Ethernet interface based on Atheros AR8031 Ethernet PHY
I/O (all functions are not available at the same time)	PCIe	2x PCIe Gen2, 1x lane
	USB	2x USB3.0/2.0 OTG and Type-C support
	UART, SPI, I2C, Audio	4x UART, 3x SPI, 4x I2C, 5x SAI, SPDIF
	QSPI	QuadSPI with support for XIP
	GPIO	Unused digital I/Os can be used as GPIOs
	Memory card	1x SD3.0/MMC5.1
Other	Boot parameters	E2PROM storing board information including Ethernet MAC address
	Watchdog	On-board watchdog functionality
	RTC	On-board RTC via PMIC (BD71837MWV)
	Power Management (PMIC)	PMIC (BD71837MWV) supporting DVFS techniques for low power modes
Power	Supply voltage	+4.2V
	Power consumption	TBD
Environment	Operating Temperature	0 - 70° and -40 - 85° Celsius

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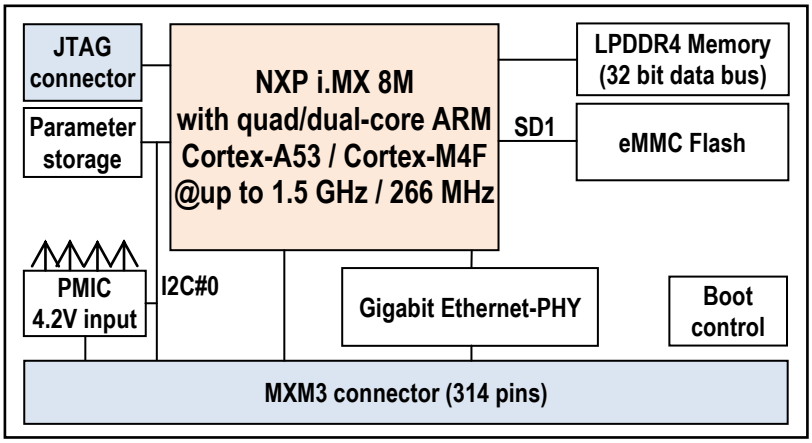
	Operating Humidity	5 - 90% relative humidity, non-condensing
Mechanical	Dimensions (W x H x D)	82 x 50 mm, same as SMARC form factor but different pinning for better carrier board routing
Connectors		314 pos MXM3 edge connector, 0.5 mm pitch
		10 pos 0.5 mm pitch FPC for JTAG

Block Diagram



Ordering Information

Part No.[1]	CPU	Number or cores	SDRAM	eMMC	Supply Voltage	Operating Temperature
EAC00333	MIMX8MQ6DVAJZA	4x Corex-A53 1x Cortex-M4F	1 GByte LPDDR4	8 GByte	4.2V	0 - 70° C

[1] Standard configuration listed. Industrial temperature, dual-core version and other memory configurations on request.

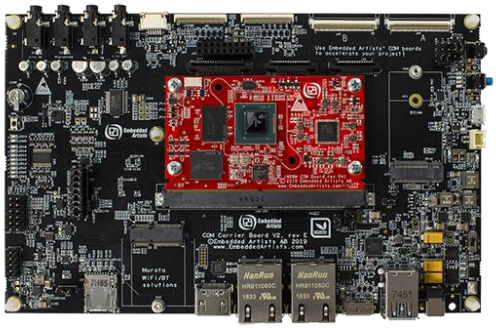
Support Highlights

Embedded Artists is a reliable and competent partner - we help you become successful!

- Professional and responsive support
- Pre-designed standard Carrier boards for integration
- Custom Carrier board design
- Customization
  - Different pinning, supply voltage, memory sizes, etc
  - Single Board Computer (SBC) solutions
- Display solutions
- Mechanical solutions
- Schematic review of customer carrier board designs
- Driver and application development

Development Kit

The iMX8M COM Board is supported by the ***iMX8M Developer's Kit*** that provides a quick path to get started with development and integration work.
The kit provides reference implementations of key interfaces.
Ordering part No. **EAK00330**



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